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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/650,246

08/28/2003

Frank Athari

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25700

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04/09/2010

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EXAMINER

RUTLAND WALLIS, MICHAEL

ART UNIT

PAPER NUMBER

2836

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/650,246	<b>Applicant(s)</b> ATHARI, FRANK	
	<b>Examiner</b> MICHAEL RUTLAND WALLIS	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/4/10 has been entered.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the power transistor switching stage and power switching stage must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 14-15 and 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Pelly (U.S. Pat. No. 6,636,107)

With respect to claims 14, 21 and 23 Pelly teaches a circuit arrangement comprising: an active EMI filter (circuitry connected between terminals A,D and B,F in Fig. 3) including an input and an output (see terminals A,D and B,F), said input connected to receive an output voltage from a power switching stage (item 40) and said output of said active EMI filter providing a filtered output voltage to a load (item 42 for

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example); a current sensor (item 44) sensing a common mode current (for example col. 6 lines 45-50) to said load; an amplifier stage (see stage surrounding item 70) including first and second transistors (Q1 and Q2) each controlled by said current sensor, collectors of said first and second transistors sharing a common connection (point E); isolating circuitry (item 47) coupled to said common connection and a ground line (item 43 or neutral line), wherein said isolating circuitry passes a current (current through point E to ground line for example  $i_o$  and/or  $i_{GND}$ ) to cancel said common mode current in said ground line.

With respect to claims 15 Pelly teaches wherein said first and second transistors are complementary (see schematic symbols or see claim 6 of Pelly).

With respect to claim 22 Pelly teaches wherein said ground line (item 43 or neutral line) connects said load (for example motor) and said power switching stage (see input connections).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pelly (U.S. Pat. No. 6, 690,230) in view of Ohkawa et al. (U.S. Pat. No. 5,668,464)

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With respect to claim 20 Pelly teaches the power switching stage comprises an output stage comprising a capacitor with the output voltage provided across the capacitor. Pelly does not teach the use of an inductor in combination with the capacitor in the output stage. Ohkawa teaches (item 130) the use of an input filter (items 18 and 36) connected at the output of the power switching stage. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pelly to include the use of an inductor in order to filter the supplied voltage.

Claims 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelly (U.S. Pat. No. 6,690,230) in view of Sato (U.S. Pat. No. 5,731,689)

With respect to claims 14 and 24 Pelly teaches a circuit arrangement comprising: an active EMI filter (see Fig. 1) including an input and an output, said input connected to receive an output voltage from a power switching stage (item 100 and said output of said active EMI filter providing a filtered output voltage to a load (motor); a current sensor sensing (CT sensing) a common mode current to said load; an amplifier stage including first and second transistors (Q1 and Q2) each controlled by said current sensor, collectors of said first and second transistors sharing a common connection; isolating circuitry coupled to said common connection and a ground line, wherein said isolating circuitry passes a current to cancel said common mode current in said ground line. Pelly does not teach the use of a power transistor switching stage to output the AC output voltage. Sato teaches a control system wherein a power transistor switching stage is provided to provide an AC power output from a DC power source. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pelly

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to use a power transistor switching stage which is a switch mode power supply in order to provide a filter voltage from a battery supply.

Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelly (U.S. Pat. No. 6,690,230) in view of Takahashi et al. (U.S. Pat. No. 6,842,069)

With respect to claim 16-19 Pelly teaches the use of an active EMI filter however does not teach the use of a second secondary. Takahashi teaches the use of first and second secondaries (Fig 3 and 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pelly to reduce common mode noise in order to allow the voltage a boosted voltage at the current sensing terminal.

Claims 25 and 27-32 are rejected under 35 U.S.C. 103(a) as being anticipated by Pelly (U.S. Pat. No. 6,636,107) in view of Kolar (U.S. Pat. No. 6,700,806) in further view of Takahashi et al. (U.S. Pat. No. 6,842,069)

With respect to claim 25 and 27-31 Pelly teaches a circuit arrangement comprising: an active EMI filter (circuitry connected between terminals A,D and B,F in Fig. 3) including an input and an output (see terminals A,D and B,F), said input connected to receive an output voltage from a power switching stage (item 40) and said output of said active EMI filter providing a filtered output voltage to a load (item 42 for example); a current sensor (item 44) sensing a common mode current (for example col. 6 lines 45-50) to said load; an amplifier stage (see stage surrounding item 70) including first and second transistors (Q1 and Q2) each controlled by said current sensor, collectors of said first and second transistors sharing a common connection (point E); isolating circuitry (item 47) coupled to said common connection and a ground line (item

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43), wherein said isolating circuitry passes a current (current through point E to ground line for example  $i_o$  and/or  $i_{GND}$ ) to cancel said common mode current in said ground line. Pelly does not illustrate the use of a transistor based switching stage arranged at the input. Kolar teaches (col. 2 lines 30-50) power transistors may be arranged as means to control the voltage conversion. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pelly to use power transistors in order to reduce the output voltage. Pelly teaches the use of an active EMI filter however does not teach the use of a second secondary. Takahashi teaches the use of first and second secondaries (Fig 3 and 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pelly to reduce common mode noise in order to allow the voltage a boosted voltage at the current sensing terminal.

With respect to claim 32 Pelly teaches wherein said ground line (item 43 or neutral line) connects said load (for example motor) and said power switching stage (see input connections).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pelly (U.S. Pat. No. 6, 690,230) in view of Kolar (U.S. Pat. No. 6,700,806) in view of Takahashi et al. (U.S. Pat. No. 6,842,069) in view of Ohkawa et al. (U.S. Pat. No. 5,668,464)

With respect to claim 26 Pelly as modified above teaches the power switching stage comprises an output stage comprising a capacitor with the output voltage provided across the capacitor. Pelly does not teach the use of an inductor in combination with the capacitor in the output stage. Ohkawa teaches (item 130) the use



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of an input filter (items 18 and 36) connected at the output of the power switching stage. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pelly to include the use of an inductor in order to filter the supplied voltage.

Claims 25 and 33 are rejected under 35 U.S.C. 103(a) as being anticipated by Pelly (U.S. Pat. No. 6,636,107) in view of Kolar (U.S. Pat. No. 6,700,806) in further view of Takahashi et al. (U.S. Pat. No. 6,842,069) in view of Sato (U.S. Pat. No. 5,731,689) Pelly teaches a circuit arrangement comprising: an active EMI filter (see Fig. 1) including an input and an output, said input connected to receive an output voltage from a power switching stage (item 100 and said output of said active EMI filter providing a filtered output voltage to a load (motor); a current sensor sensing (CT sensing) a common mode current to said load; an amplifier stage including first and second transistors (Q1 and Q2) each controlled by said current sensor, collectors of said first and second transistors sharing a common connection; isolating circuitry coupled to said common connection and a ground line, wherein said isolating circuitry passes a current to cancel said common mode current in said ground line. Pelly does not illustrate at the use of a transistor based switching stage arranged at the input. Kolar teaches (col. 2 lines 30-50) power transistors may be arranged as means to control the voltage conversion. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pelly to use power transistors in order to reduce the output voltage. Pelly teaches the use of an active EMI filter however does not teach the use of a second secondary. Takahashi teaches the use of first and second secondaries (Fig 3 and 4). It would have been obvious to one of ordinary skill in the art at the time of the

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invention to modify Pelly to reduce common mode noise in order to allow the voltage a boosted voltage at the current sensing terminal. Pelly does not teach the use of a power transistor switching stage to output the AC output voltage. Sato teaches a control system wherein a power transistor switching stage is provided to provide an AC power output from a DC power source. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Pelly to use a power transistor switching stage which is a switch mode power supply in order to provide a filter voltage from a battery supply.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on 571-272-2391. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Michael Rutland-Wallis/  
Examiner, Art Unit 2836